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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,283	01/23/2004	Thomas R. Chapman	081276-9159-00	9682
34044	7590	03/13/2006		
MICHAEL BEST & FRIEDRICH LLP 100 EAST WISCONSIN AVENUE MILWAUKEE, WI 53202			EXAMINER HANAN, DEVIN J	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/764,283	<b>Applicant(s)</b> CHAPMAN, THOMAS R.	
	<b>Examiner</b> Devin Hanan	<b>Art Unit</b> 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on remarks dated 2/2/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-34 and 37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 15-24 and 37 is/are rejected.
- 7) ☒ Claim(s) 5, 8-14 and 25-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments see remarks, filed 2/2/2006, with respect to the shroud being integral with at least a portion of one side edge of the first plurality of blades have been fully considered and are persuasive.

Applicant argues that the Garrett reference does not show the ring 31 or the disk 16 (the disk 16 of Garrett is equivalent to the hub 50 of the instant application) to be integral with the blades 17 (remarks page 14 beginning with the last paragraph and continuing onto page 15). The examiner agrees that Garrett does not disclose the ring, disk and blades to be of one piece construction. However, Applicant does not include limitations in the claim to differentiate the instant application from the prior art, applicant discusses one piece construction in the arguments (page 15 second paragraph), but similar language is not found in the claim. Garrett describes the connection between disk and blades as "a conventional compressor impeller formed by mounting on one surface of a circular disk 16, a plurality of substantially radially disposed impeller blades 17" (page 2 lines 40-45). Garrett describes the connection between the blades and the ring as "a cylindrical ring 31 which is mounted on the periphery of the entry edges 18 of the impeller blades 17" (page 2 lines 74-76). The examiner maintains that the blades are integral with both the hub and the ring to insure that the three elements will in fact rotate together as one unit.

Additionally, the new claim 37 has been rejected under 35 U.S.C. 102.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-7, 19-24 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Garrett (British patent 761,937).

Garrett discloses a centrifugal fan with

a hub (on shaft 12 to the right of washer 19) adapted for rotation about a central axis (axis lies along shaft 12);

a first plurality of blades (17) arranged about the central axis, wherein each of the blades defines

a leading edge (11);

a trailing edge (radially outer edge of blade 17);

a first side edge (edge of blade 17 between leading edge and trailing edge not in contact with the hub) extending between the leading edge and the trailing edge, the first side edge being swept from the leading edge in a direction axially away from the leading edge and radially outward toward the trailing edge;

a second side edge (between leading edge and trailing edge in contact with the hub) extending between the leading edge and the trailing edge, a portion of the second side edge integral with at least a portion of the hub, the second side edge being swept

from the leading edge in a direction axially away from the leading edge and radially outward toward the trailing edge;

an inlet radius defined as an outermost radius of the blade leading edge (distance from axis to point where the leading edge and first side edge meet);

a shroud (shroud ring 31 is capable of being integrally formed with the first side edge) integral with at least a portion of one of the first and second side edges of the first plurality of blades;

an intermediate radius defined as an innermost radius of the shroud (radius of shroud 31);

curvature in the first plane (page 2 lines 40-46), the first plane extending through the blade and tangent to a cylinder which extends through the blade and is centered along the central axis, the cylinder (52) being of a radius greater than a hub radius and less than the inlet radius; and

no curvature in a second plane, the second plane extending through the blade and tangent to a cylinder (12) which extends through the blade and is centered along the central axis, the cylinder being of a radius greater than the intermediate radius.

Regarding claim 2, Garrett discloses leading edges of blades that are substantially perpendicular to the central axis (figure 1 end of arrow 14).

Regarding claim 3, Garrett discloses the trailing edges of blades that are substantially parallel to the central axis (figure 1 radially outer edge of blade 17).

Regarding claim 4, Garrett discloses a centrifugal fan with a first shroud (31) fixed to at least a portion of the respective first side edges of the first plurality of blades

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for rotation therewith, the first shroud shaped to follow at least a portion of a contour of the respective first side edges of the first plurality of blades (figure 2).

Regarding claim 6, Garrett discloses a first shroud with a cylindrical portion (31).

Regarding claim 7, Garrett discloses a cylindrical portion of the first shroud extends upstream of an intersection of the leading edge of the blade and the first side edge of the blade (figure 1 shroud 31 extends along leading edge).

Regarding claims 19-21, Garrett discloses a skewed leading edge (page 2 lines 40-46).

Regarding claims 22-24, Garrett discloses a raked leading edge (page 2 lines 40-46).

Regarding claim 37, Garrett discloses the hub (16) extends in a direction parallel to the central axis (the hub appears parallel to the central axis at a point where the hub connects to the leading edge 11 of blade 17).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrett in view of Botros (U.S. Patent 6,168,734).

Garrett discloses all of the claimed elements of claim 1,2,4, and 7, but does not teach of making the fan of plastic injection molding.

However, Botros teaches of making centrifugal fans of plastic injection molding.

Since Garrett and Botros are both centrifugal fans, the process of plastic injection molding of Botros would have been recognized in the pertinent art of Garrett (col. 1 lines 19-22) for the purpose of reducing costs.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to make the centrifugal fluid movement device by plastic injection molding to reduce manufacturing costs (col. 1 lines 19-22).

### ***Allowable Subject Matter***

Claims 5, 8-14, and 25-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 34 is allowed.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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3/9/06